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Rural Life and Farmer Attitudes: An Ohio Survey

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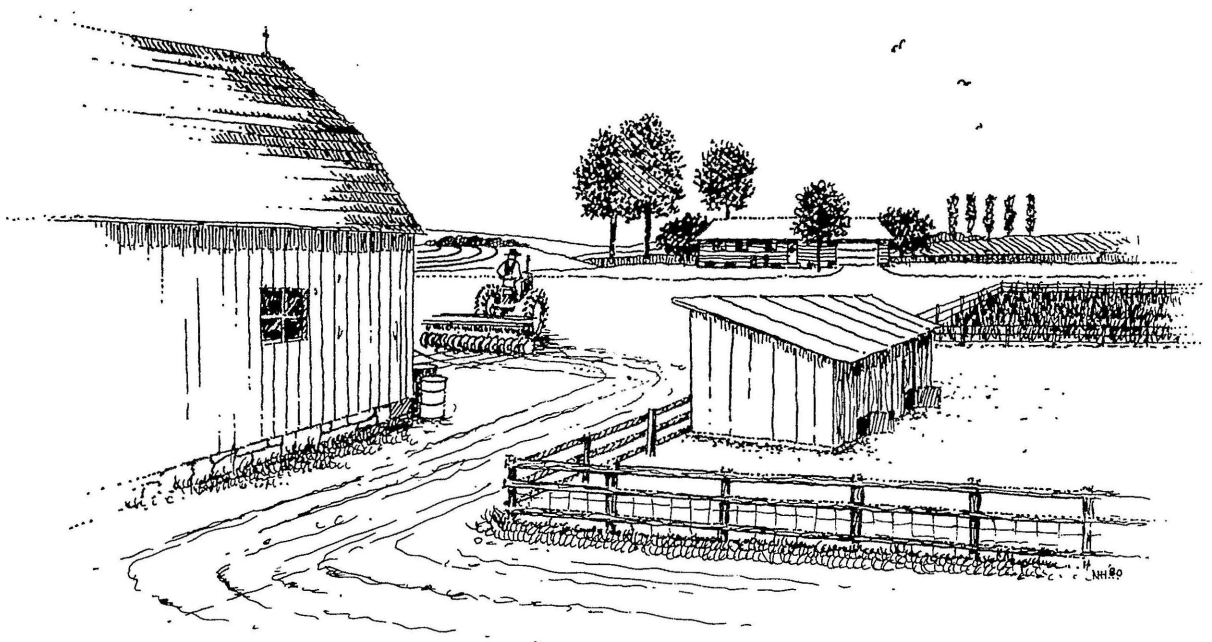
and GREGORY HOOKS



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Rural Life and Farmer Attitudes: An Ohio Survey

TED L. NAPIER, BARBARA KOHL, DAVID O. HANSEN, and GREGORY HOOKS[1]

INTRODUCTION

The purpose of this research circular is to present the preliminary research findings of a study conducted in Ohio to assess attitudes toward land use controls, pollution, and farm living, and to examine various agricultural practices of the state's farmers. The study was conducted during the spring and summer of 1979, using a mail survey for data collection. The Harvest Publishing Company permitted access to the mailing list of the *Ohio Farmer,* which constituted the universe of this study. This list of farmers is quite comprehensive as evidenced by *Ohio Farmer* surveys of its subscribers (4), which revealed that their readership consists of most agricultural producers in the state and includes a great majority of farmers in each farm product category. The percentage distributions for each product class are presented in Table 1.

A systematic random sample (1) of 2,001 people was drawn from a list of more than 74,000 farmers designated as owner-operators by the *Ohio Farmer* subscriber list. Subscribers who were associated with agricultural industries and individuals who did not own or operate a farm were excluded from the sampling frame.

A questionnaire was developed, reviewed by selected faculty in the College of Agriculture and Home Economics at The Ohio State University, pretested, revised several times, and mailed to the selected sample with a cover letter explaining the purpose of the study. A modified Dillman method (2) for mail survey research was used during the data collection phase of the study.[2] Follow-up communications at approximately 4-week intervals produced a response rate of 54.6%, which included 469 unusable cases. The 469 questionnaires eliminated from the analysis were returned by the selected subject or family member for a variety of reasons, such as death, sale of farm, and complete retirement from agriculture.[3] The 469 cases were subtracted from the original list of 2,001 names, reducing the sample to 1,532 people. There were 623 usable questionnaires, constituting a response rate of 40.7% (623/1532).

Given the sample size, the wide geographical distribution of the responses, and the comprehensive nature of the subject list from which the sample was drawn, it is argued that the data are adequate to give insight into the attitudes and behavior of the Ohio farm population. There are sampling errors such as exclusion of the very small, marginal farmers who may not subscribe to a magazine such as the *Ohio Farmer* and the very large farm operators who frequently use other sources of information (7, 8). There is also some sampling error due to refusals to complete the questionnaire, but there is no reason to believe the error is confined to specific socio-economic classes of farmers. In fact, there is considerable variation in the socio-demographic data. While it is quite possible the nonrespondents are randomly distributed

TABLE 1.—Characteristics of Ohio Farmer **Subscribers (1974) Compared with All Farmers within Ohio.**

Characteristic	Descriptive Data
	(%)
Percent of Subscribers Who Are Owners or Operators	83.3 (N = 87,040)
Percent of Total Land Farmed in Ohio by Subscribers	87.9
Percent of All Farmers with Gross Sales More Than $20,000 per Year	98.2
Ohio Farmer Subscribers as a Percentage of Crop Acreage	
Corn Acres	97.9
Soybean Acres	95.1
Wheat Acres	92.5
Percent of All Farms with 50 or More Acres	95.2
Estimated Percentage of All Farmers in the State by Product Class Who Are Subscribers to **Ohio Farmer**	
Farmers with More Than 25 Acres of Corn	94.0
Farmers with More Than 25 Acres of Soybeans	89.0
Farmers with More Than 10 Acres of Wheat	92.0
Hay Farmers	93.5
Estimated Percentage of All Farmers in the State by Animal Product Class Who Are Subscribers to **Ohio Farmer**	
Milk Cows	98.4
Hogs	92.4
Cattle	95.7

Source: A Profile of **Ohio Farmer** and Its Subscribers, 1975.

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[2]A certified letter was not used in the study, even though it has been shown to be an effective means of increasing response rates.

[3]It is highly probable that many of the questionnaires not returned would have been classified in the category of eliminated subjects, which would have increased the response rate considerably. It was not possible to assess the number of nonrespondents who would have been classified as ineligible for inclusion in the study.

and therefore not a significant source of error, it must be recognized that sampling error due to nonresponse is a potential problem and that the interpretations of the findings must be made in the context of the limitations of the sample.

FINDINGS

The data are presented in descriptive statistic form[4] and comments are made about specific findings. Socio-demographic data will be presented first, followed by the attitude findings. Farm practices will be discussed in the final section.

Socio-Demographic Characteristics

The socio-demographic characteristics of the respondents and their farm operations are presented in Table 2. These data indicate that almost half of the respondents were farm owners and another 30% were owners and principal operators of the farm. About 5.3% of the respondents were spouses of owners and operators, while 3.5% were sons of owners and operators. Principal operators comprised 8.2% of the study respondents, while partners and full-time employees comprised 1.5% of the sample. About 4.6% of the respondents did not provide information about their relationship to the farm.

The socio-demographic data show that the respondents were older people who have been associated with farming for many years. The average length of time farming was 27.2 years. Most respondents began farming in their very early 20's and maintained association with agriculture for many years. Most of the respondents had completed more than 12 years of formal education. Approximately 22% of the respondents indicated that they were retired but still active in farming, which suggests that farms frequently become a form of economic security at retirement.

The average farm size was 249 acres under cultivation. The average number of acres owned was about 162 acres, with an average of 227.5 acres rented.[5] These data indicate that rented acreage is

[4]Multivariate analyses are being conducted on the data set as of this writing. Those findings will be published in the near future.

[5]The average acres owned and rented do not sum to the total acreage farmed (249.1) because some farmers owned little land and rented nearly all of the land under cultivation. Some farmers owned all of their land and did not rent any acreage. The averages were calculated by using the number of respondents in each category (rent and own), which vary in size.

TABLE 2.—Socio-Demographic Characterisics of Study Respondents (N = 623).

Relationship of Respondents to Farm Ownership

	Number	Percent		Number	Percent
Farm Owners	294	47.2	Sons of Owners and Operators	22	3.5
Farm Owners/Operators	185	29.7	Partners in Farm	6	1.0
Spouses of Owners and Operators	33	5.3	Full-Time Employees	3	0.5
Principal Operators	51	8.2	No Data	29	4.6

Average age of respondents—52.4 years

Average years of formal education completed—respondent 12.3; spouse 12.4

Average number of years farming—27.2

Average age when beginning farming—22.5 years

Number of retired respondents—135 (22%)

- Average number of years retired—6.9 years
- Average number of years farming before retirement—34.7 years

Average farm size (total number of acres farmed)—249.1 acres

- Average number of acres owned—161.7 acres
- Average number of acres rented—227.5 acres

Average number of acres owned when beginning farming for respondents who did not rent land (N = 185)—90.7 acres

Average number of acres owned when beginning farming for respondents who owned and rented land (N = 96)—96.2 acres

Average number of acres rented when beginning farming for respondents who owned and rented land (N = 96)—119.8 acres

Average number of acres rented when beginning farming for respondents who did not own land (N = 196)—166.5 acres

Percent of farmers whose parents were engaged in farming—84.9%

Average number of acres owned by farmers' parents (N = 429)—155.1 acres

Average number of acres rented by farmers' parents (N = 409)—62.0 acres

Percent of farmers' spouses whose parents were engaged in farming—59.2%

Average number of acres owned by spouses' parents (N = 271)—151.0 acres

Average number of acres rented by spouses' parents (N = 85)—126.7 acres

quite high relative to owned land in agricultural production.

The respondents were asked to provide data relative to land holdings when they first began farming. The data revealed that 29.7% (185) of the respondents began farming with their own land and the average acreage was approximately 91 acres when they began to farm. About 15.4% of the respondents indicated that they began farming with both rented and owned land. The average acreage of owned land was slightly more than 96 acres and the average rented acreage was about 120 acres. As one would expect, individuals who started farming without owning any land had larger rental acreage than those who owned land. The average rented land holding for farmers who had no land holdings when they began farming was 166.5 acres. It is noteworthy that farmers who started farming with only the land they owned and those who also rented had very similar acreage owned (90.7 and 96.2 acres, respectively).

The respondents were also requested to provide information about their parents' association with agriculture. The findings demonstrated that almost 85% of the farmers' parents were also farmers. The proportion of spouses with farming parents was substantially less (59.2%). About 68.9% (429) of the sample respondents indicated that their parents owned an average of 155.1 acres, and 65.7% (409 respondents) noted that their parents rented an average of 62 acres. This suggests that most farmers in the previous generation were operating farms with a large proportion of owned land. The data for the study respondents show that rental land for farming is much more important in the present generation. The findings show that the proportion of land rented was quite high compared to owned land (227.5 acres rented compared with 161.7 acres owned).

It is interesting to note that average acreage of farm land owned was almost the same for spouses' parents when the spouse was from a farm background. The average acreage rented by spouses' parents was much higher for those who rented land than spouses' parents who owned land.

Farm Acreage Owned and Rented

The data relative to farm acreage owned and rented were broken down into several different size categories; the findings are presented in Tables 3 and 4. These data show that almost 56% of the respondents were associated with farms of less than 100 acres of land owned. When the next category is added (101-200 acres), 80.7% of the respondents are

TABLE 3.—Distribution of Farm Acreage Owned and Rented.

	Owned (N = 529)		Rented (N = 293)	
Acres Category	Absolute Frequency	Percentage	Absolute Frequency	Percentage
<50	119	22.5	65	22.3
51 - 100	124	23.4	56	19.2
101 - 200	184	34.8	73	25.0
201 - 300	48	9.1	36	12.3
301 - 400	20	3.8	18	6.2
401 - 500	15	2.8	8	2.7
501 - 1000	14	2.6	31	10.6
1001>	6	1.0	5	1.7
Totals	529	100.0	293	100.0

TABLE 4.—Distribution of Total Acreage Being Farmed (N = 544).

	Frequency	Percentage	Cumulative Percentage
Less than 50 acres	105	19.3	19.3
50 - 100 acres	110	20.2	39.5
101 - 200 acres	113	20.8	60.3
201 - 300 acres	88	16.2	76.5
301 - 400 acres	40	7.4	83.9
401 - 500 acres	30	5.5	89.4
501 - 1,000 acres	39	7.2	96.6
More than 1,000 acres	19	3.5	100.1*
Total	544	100.1*	

*Due to rounding error.

TABLE 5.—Distribution of Agricultural Training Completed by Respondents and Spouses (Percentages in Parentheses).

Type of Agricultural Training	Farmer		Spouse	
4-H	175	(28.1)	101	(16.2)
Vo-ag (high school)	236	(37.9)	16	(2.6)
Vo-ag (night school)	49	(7.9)	6	(1.0)
College short course	41	(6.6)	11	(1.8)
Attended agricultural college	40	(6.4)	6	(1.0)
Graduated from agricultural college	37	(5.9)	7	(1.1)
Not applicable*			7	(1.1)
None	45	(7.2)	469	(75.3)
Totals	623	100.0	623	100.1†

*Single or widowed respondents.
†Percentage does not sum to 100.0 due to rounding error.

included. If this pattern is shown to be generalizable to the state, then concentration of land ownership has taken place in Ohio because a minority of farmers apparently own a large proportion of cultivated land in the state.

The data in Table 4 add insight into concentration of land in production. Slightly more than 60% of the farmers engaged in agricultural production are farming 200 acres or less and 76.5% of the respondents are farming 300 acres or less. These findings suggest that 23.4% of the respondents are farming a relatively large portion of the farm land represented by the sample.

Educational Experiences

The respondents were asked to provide information about their agricultural education experiences and those of their spouses. These data are presented in Table 5.

Approximately 93% of the farmers and 25% of their spouses had received some type of agriculturally oriented training. The most frequently used mechanism for agricultural training was vocational agriculture in high school (about 38%). Another important training program was 4-H. About 28% of the respondents had been associated with 4-H programs at some time in their lives. Short courses and evening vocational agricultural courses were not cited frequently as training mechanisms. About 13% of the farmers attended agricultural college courses and 5.9% of these actually received a degree. These data clearly show that the farmers included in the study had prepared themselves for entry into farming. Most were from farm backgrounds (practical experience) and a majority had taken some type of formal agricultural training.

The data presented in Table 5 for farmers' spouses are noteworthy since most of them had not participated in agricultural training programs. About 75% of the spouses had not received any type of agricultural training, which should not be surprising since previously discussed findings revealed that many spouses were from nonfarm backgrounds. When spouses had been engaged in agricultural training, they were most frequently associated with 4-H programs (16.2% of the spouses had been members of

TABLE 6.—Attitudes Toward Land Use Controls (Percentages in Parentheses—N = 623).*

Attitude Item	Strongly Disagree 1†	Disagree 2†	Undecided 3†	Agree 4†	Strongly Agree 5†	No Response	Mean
‡No one has the right to tell farmers what they can or cannot do with their own land.	9 (1.4)	88 (14.1)	58 (9.3)	204 (32.7)	245 (39.3)	19 (3.0)	4.0
‡Farmers should have the right to sell their land to anyone for any purpose.	31 (5.0)	163 (26.2)	80 (12.8)	178 (28.6)	152 (24.4)	19 (3.0)	3.4
**Land use controls should be supported in my county.	59 (9.5)	130 (20.9)	159 (25.5)	199 (31.9)	43 (6.9)	33 (5.3)	3.1
‡Land use controls will harm most farmers within my county.	18 (2.9)	193 (31.0)	196 (31.5)	144 (23.1)	44 (7.1)	28 (4.5)	3.0
**Land use controls will increase property values of most farm land within my county.	32 (5.1)	164 (26.3)	235 (37.7)	148 (23.8)	18 (2.9)	26 (4.2)	2.9
‡Land use controls are not needed in my county.	35 (5.6)	157 (25.2)	177 (28.4)	173 (27.8)	55 (8.8)	26 (4.2)	3.1
**Land use controls are a good way of protecting the best farm land.	38 (6.1)	111 (17.8)	159 (25.5)	236 (37.9)	55 (8.8)	24 (3.9)	3.3

*Percentages may not sum to 100.0 due to rounding error.
†Weighted value given to each response.
‡Strong agreement indicates a negative attitude toward land use controls.
**Strong agreement indicates a positive attitude toward land use controls.

4-H). Only 2.1% of the farmers' spouses had attended an agricultural college and only 1.1% had received a degree.

Attitudes Toward Rural Living and Agriculture

The study respondents were polled on a variety of attitudes using a Likert-type (3) format of strongly agree to strongly disagree. The issues evaluated were: attitudes toward land use controls, attitudes toward pollution from agricultural sources, attitudes toward agriculture as a way of life, attitudes toward farming as a business, and attitudes toward government involvement in agriculture.

The "attitude toward land use control" findings are presented in Table 6 and demonstrate that the respondents tend to be slightly negative toward land use controls. This finding is consistent with previous research conducted among Ohio rural populations using this scale (6).

The findings in Table 6 show that the respondents tended to believe that no one had the right to tell landowners what they can or cannot do with their own land. The respondents also believed they should be able to sell their land to anyone for any purpose. Interestingly, the respondents were basically undecided about whether or not land use controls would hurt farmers in their county of residence and were equally uncertain about the need for land use controls. The residents were also undecided about the impact land use controls would have upon property values. They did feel, however, that land use controls are a good means of protecting the best farm land.

There are some contradictions evident in the attitudes exhibited by the respondents toward land use controls. While the group recognized some positive aspects of controlling land uses, they were strongly opposed to having anyone tell them what they can or cannot do with their land. Apparently the respondents would like to have the benefits of land use controls without internalizing the costs associated with such action. These findings parallel those of another study recently conducted in Ohio (6).

Attitudes Toward Environmental Pollution

Data concerning attitudes toward environmental pollution associated with agriculture are presented in Table 7. These data show that the farmers included in the sample do not perceive agriculture to be a major source of pollution, even though national concern for nonpoint water pollution is indicative of the seriousness of the problem. The study respondents were basically consistent in their responses to the attitude statements which demonstrated a positive orientation toward agricultural production and a neutral to slightly negative orientation toward environmental issues. The farmer respondents believed that production was much more important than environmental pollution caused by farming. They also were slightly opposed to strong agricultural pollution laws and strongly believed that farmers use fertilizers carefully. The respondents were environmentally concerned to the extent that they believed pesticides which are harmful to wildlife should be banned and that farming should not be exempt from environmental laws.

In sum, the responses to the attitude statements about environmental pollution indicate a pro-agricultural production orientation. Farmers appear to be strongly supportive of their industry and appar-

TABLE 7.—Attitudes Toward Environmental Pollution Associated with Agriculture (Percentages in Parentheses —N = 623).*

Attitude Item	Strongly Disagree 1†	Disagree 2†	Undecided 3†	Agree 4†	Strongly Agree 5†	No Response	Mean
‡Farming is a major source of environmental pollution.	229 (36.8)	289 (46.4)	28 (4.5)	37 (5.9)	16 (2.6)	24 (3.9)	1.9
**Agricultural production is more important than environmental pollution caused by farming.	12 (1.9)	90 (14.4)	67 (10.7)	281 (45.1)	153 (24.6)	20 (3.2)	3.8
‡Strong agricultural pollution laws should be supported.	113 (18.1)	245 (39.3)	122 (19.6)	99 (15.9)	17 (2.7)	27 (4.3)	2.4
‡Pesticides that are harmful to wildlife should be banned.	27 (4.3)	156 (25.0)	162 (26.0)	202 (32.4)	52 (8.3)	24 (3.9)	3.2
**Most farmers use fertilizer carefully.	7 (1.1)	29 (4.7)	36 (5.9)	403 (64.7)	130 (20.9)	18 (2.9)	4.0
‡Farming should not be exempt from laws to protect the environment.	38 (6.1)	109 (17.5)	134 (21.5)	286 (45.9)	32 (5.1)	24 (3.9)	3.3

*Percentages may not sum to 100.0 due to rounding error.
†Weighted value given to each response.
‡Strongly agree indicates a positive orientation toward environmentalism.
**Strongly agree indicates a negative orientation toward environmentalism.

TABLE 8.—Attitudes of Ohio Farmers Toward Farm Living (Percentages in Parentheses—N = 623).*

Attitude Item	Strongly Agree 5†	Agree 4†	Undecided 3†	Disagree 2†	Strongly Disagree 1†	No Response	Mean‡
Agricultural life is the natural life for man.	139 (22.3)	339 (54.4)	53 (8.5)	56 (9.0)	1 (0.2)	35 (5.6)	4.0
The family farm is the best way to make sure Americans have plenty to eat at reasonable prices.	250 (40.1)	277 (44.5)	38 (6.1)	24 (3.9)	1 (0.2)	33 (5.3)	4.3
The family farm is very important to democracy.	281 (45.1)	276 (44.3)	21 (3.3)	7 (1.1)	0 (0.0)	38 (5.1)	4.4
The farm is the ideal place to raise a family.	319 (51.2)	236 (37.9)	26 (4.2)	9 (1.4)	2 (0.3)	31 (5.0)	4.5
A movement of the population back to rural areas would help to cure many of the nation's problems.	66 (10.6)	148 (23.8)	134 (21.5)	197 (31.6)	46 (7.4)	32 (5.1)	3.0

*Percentages may not sum to 100.0 due to rounding error.
†Weighted values given to each designated response.
‡High scores indicate a positive orientation toward rural living.

TABLE 9.—Attitudes Toward Farming and Government Involvement (Percentages in Parentheses—N = 623).*

Attitude Item	Strongly Agree 5†	Agree 4†	Undecided 3†	Disagree 2†	Strongly Disagree 1†	No Response	Mean
I would rather take a chance on making a big profit than a smaller but more sure profit.	19 (3.0)	109 (17.5)	68 (10.9)	337 (54.1)	48 (7.7)	42 (6.7)	2.5
There are serious problems facing U. S. agriculture today.	204 (32.7)	339 (54.4)	25 (4.0)	20 (3.2)	2 (0.3)	33 (4.2)	4.2
The successful farmer is the one who makes the most profit.	25 (4.0)	119 (19.1)	57 (9.1)	331 (53.1)	53 (8.5)	38 (6.1)	2.5
We have adequate ways of coping with pressure groups.	9 (1.4)	57 (9.1)	128 (20.5)	294 (47.2)	93 (14.9)	42 (6.7)	2.3
Programs in Ohio should be set up to facilitate direct marketing of certain farm products.	64 (10.3)	353 (56.7)	119 (19.1)	42 (6.7)	5 (0.8)	40 (6.4)	3.7
Government programs should be directed at making more off-farm jobs available to farmers with low incomes.	26 (4.2)	161 (25.8)	138 (22.2)	206 (33.1)	56 (9.0)	36 (5.8)	2.8
One cannot rely on government programs to improve the small farmer's livelihood.	151 (24.2)	361 (57.9)	31 (5.0)	33 (5.3)	9 (1.4)	38 (6.1)	4.1
The only real objective in farming is to make a profit.	26 (4.2)	145 (23.3)	32 (5.1)	331 (53.1)	49 (7.9)	40 (6.4)	2.6
The average citizen can have an influence on government decisions.	36 (5.8)	265 (42.5)	66 (10.6)	163 (26.2)	58 (9.3)	35 (5.6)	3.1
Government programs should be directed at improving the livelihood of farmers so that off-farm work is not necessary to make a living.	102 (16.4)	259 (41.6)	82 (13.2)	118 (18.9)	28 (4.5)	34 (5.5)	3.5
Programs should be developed to encourage the formation of large farms in Ohio.	10 (1.6)	21 (3.4)	47 (7.5)	314 (50.4)	195 (31.3)	36 (5.8)	1.9
The best way to improve my farm operation is to increase the size and complexity of my farm machinery.	10 (1.6)	67 (10.8)	60 (9.6)	365 (58.6)	76 (12.2)	45 (7.2)	2.3
Most people have little chance of protecting personal interests when they conflict with those of strong pressure groups.	103 (16.5)	357 (57.3)	73 (11.7)	42 (6.7)	5 (0.8)	43 (6.9)	3.9
Farming is strictly a business.	79 (12.7)	250 (40.1)	25 (4.0)	208 (33.4)	24 (3.9)	37 (5.9)	3.3
Agriculture would be better off if the number of small farms was increased.	86 (13.8)	213 (34.2)	142 (22.8)	132 (21.2)	9 (1.4)	41 (6.6)	3.4
People in government don't care what people like me think.	130 (20.9)	248 (39.8)	72 (11.6)	123 (19.7)	10 (1.6)	40 (6.4)	3.6

*Percentages may not sum to 100.0 due to rounding error.
†Weighted value given to each designated response.

cntly perceive little damage being contributed to the environment by contemporary agricultural practices. These perceptions, however, are not consistent with existing research findings which show that agriculture is a major contributor to water pollution (5). Sedimentation of streams due to soil erosion caused by continuous row-cropping, pesticide and nitrogen runoff are examples of agricultural pollution.

The data in Table 7 suggest that most Ohio farmers will not support the application of strong environmental controls to agriculture within the state. The data suggest, however, that a majority of the farmers believe that farming should not be wholly exempt from environmental legislation.

Attitudes Toward Farm Living

Attitude items were included in the questionnaire to assess how the farm respondents feel about rural living as a way of life. These data are summarized in Table 8.

The findings for the attitudes toward farm living revealed an overwhelmingly positive orientation toward farming and rural living. Agriculture was viewed as the natural way of life for human beings. Farms were perceived to be excellent places to raise a family and very important to maintaining a democratic form of government. The family farm was viewed as the best means for providing people within the U. S. with enough food to eat at reasonable prices. The respondents, however, were undecided about whether or not the return to rural living would solve the nation's problems.

These data demonstrate a very strong commitment to rural living. The attitudes exhibited by the respondents suggest that challenges to the family farm and rural living will be very strongly resisted by farmers in Ohio.

Attitudes Toward Farming and Government

A series of questions was developed to evaluate attitudes toward farming and governmental involvement in agriculture. The responses to these items are presented in Table 9. The findings demonstrated that the respondents were more interested in making a sure profit than in taking risks, even when taking risks potentially could produce larger profits. This suggests that farmers are likely to be cautious in adopting farm practices or technology which have high risks attached to them.

While profits are important considerations in farming, the farmers included in this study indicated that profit is not the only objective. They also noted that the most successful farmer was not necessarily the one that makes the most profit, even though a majority of the respondents viewed farming as strictly a business. This suggests that criteria other than profit margins are used to assess whether or not a person is a successful farmer. It is quite possible that farmers judge farming success in terms of decision-making relative to risk. As noted above, the farmers indicated that sure profit is more desirable than risk-taking to secure greater profits.

There was general agreement that farming as a business is facing serious problems and that government programs will have little effect upon the livelihood of farmers. Most of the farmers surveyed believed that people in government really do not care what farmers think and that most people are really not able to protect their interests when they conflict with interests of strong pressure groups.

These findings indicate a degree of disenchantment with government programs and a feeling of estrangement from decision-makers in government. The feeling of helplessness is reinforced by the expressed opinion that farmers do not have adequate means of coping with pressure groups. This implies that farmers do not believe they have an effective means of making their viewpoints known.

While the respondents expressed little confidence in government and government programs to solve their problems, most of the people surveyed felt that the government should develop programs which would improve farm income so that farmers would not have to seek nonfarm employment. There was a tendency for the respondents to oppose government programs which would make off-farm jobs available to low-income farmers. These findings imply that the study respondents would endorse government action to enhance farm income but oppose programs designed to accommodate low-income farmers in nonfarm employment.

Farmers were very positive toward government programs to facilitate direct marketing of farm products. Apparently they believed that eliminating "middlemen" in the food marketing system would improve their economic situation.

The respondents were asked to evaluate a statement about using technological means of improving their farm operations. More than 70% of the respondents disagreed with the statement that the best method of improving farm operations is to increase the size and complexity of farm equipment. They were also strongly opposed to programs which would result in increasing farm size within the state. Almost 82% of the respondents felt that programs designed to encourage the formation of large farming operations were not in their best interests. Conversely, 48% of the respondents indicated that agriculture would be better off if the number of small farms was increased. Only 22.6% of the respondents believed that agriculture would *not* be better off with more

small farms. These findings suggest that programs designed to encourage the formation of large farming operations within the state would not be widely supported by the farm population.

Factors Contributing to Problems in Agriculture

Respondents were asked to evaluate several factors that could contribute to problems in agriculture. The potential contributing factor was presented and the respondent was instructed to select one of the following response categories: none, somewhat, most, all. If the respondent felt the factor was the cause of all of the problems, they were instructed to check "all". If they believed the factor was *not* a cause, they were instructed to check "none". Similar instructions were given for the intermediate responses. The responses are presented in Table 10.

While the list of factors to be evaluated was not exhaustive, the data presented in Table 10 show that most factors considered to be contributors to the problems in agriculture today are structurally based. International trade policies, government farm programs, agri-business, and middlemen were perceived to be the most important contributors to farm problems. Farm management skills, natural events, and a profit-oriented economic system were viewed as contributing factors, but less important than the three noted above. The free enterprise system and the existence of too many farmers were not perceived to be major causes of the problems. These data indicate that farmers do not perceive the problems facing agriculture to be caused by any one factor. If the farmers' perceptions are correct, then governmental policy to solve agricultural problems must be broad in scope and attack several issues simultaneously.

The respondents were also asked to indicate which of the factors in Table 10 or one not mentioned was the *single most contributing* factor to problems in agriculture. If the respondents believed the most important factor was some issue not listed, then they were requested to note the factor in a space provided. The responses are summarized in Table 11.

These data indicate that the farmers who elected to respond to the question believed that farm programs are the single most important factor contributing to agricultural problems. Other structural factors such as agri-business interests (middlemen) and international trade were selected in that order. Individual characteristics, natural events, number of farmers, and the economic system were not viewed as contributing factors.

Potential Solutions to Problems Facing Agriculture

An attempt was made to ascertain the mechanisms which the farm sample would consider to be effective in reducing or eliminating the problems facing agriculture. The issues used in Tables 10 and 11 were employed to develop alternative strategies for solving the problems. The respondents were asked to rank various strategies by noting whether the strategy would be harmful, neither harmful nor helpful, somewhat helpful, and very helpful. The responses were weighted 1 through 4, with "harmful" receiving a weight of 1 and "very helpful" a value of 4. These data are presented in Table 12.

The data presented in Table 12 clearly show that

TABLE 10.—Factors Contributing to Problems in Agriculture Today (Percentages in Parentheses).*

Potential Contributing Factor	Importance of the Factor in Causing Problem				Mean	Number of Respondents‡
	None 1†	Somewhat 2†	Most 3†	All 4†		
Lack of farm management skills	85 (14.9)	383 (67.0)	93 (16.3)	11 (1.9)	2.05	572
Natural events (drought, blight, etc.)	51 (8.9)	418 (73.2)	81 (14.2)	21 (3.7)	2.12	571
Too many farmers	482 (84.9)	73 (12.9)	12 (2.1)	1 (0.2)	1.18	568
Government farm programs	53 (9.3)	331 (58.3)	145 (25.5)	39 (6.9)	2.30	568
International trade policies	29 (5.2)	303 (54.1)	193 (34.5)	35 (6.2)	2.42	560
Agri-business, processors, retailers	53 (9.4)	313 (55.8)	162 (28.9)	33 (5.9)	2.31	561
A free enterprise system of farming	345 (61.5)	152 (27.1)	48 (8.6)	16 (2.9)	1.53	561
An economy based on profits	215 (38.7)	213 (38.4)	96 (17.3)	31 (5.6)	1.90	555

*Percentages may not sum to 100.0 due to rounding error.
†Weighted value given to each designated response.
‡Several respondents elected not to answer this question, which explains the variability in the number of respondents.

TABLE 11.—Most Important Factor Contributing to Problems in Agriculture (N = 317).

Factor	Ranking	Number of Respondents Selecting Factor as Most Important
Government farm programs	1	120
Agri-business, processors, and retailers	2	70
International trade	3	55
Lack of management skills	4	32
An economy based on profits	5	17
Natural events (drought, blight)	6	10
Too many farmers	7	7
A free enterprise system of farming	8	6

TABLE 12.—Attitudes of Ohio Farmers Toward Alternative Strategies for Solving Problems in U. S. Agriculture (Percentages in Parentheses).*

Possible Solution	Harmful 1†	Neither Harmful nor Helpful 2†	Somewhat Helpful 3†	Very Helpful 4†	Number of Respondents‡	Mean for Item Response	Weighted Rank Order**
Reduce government involvement	45 (7.7)	40 (6.8)	289 (49.4)	211 (36.1)	585	3.14	3
Expand agricultural training in farm management skills	16 (2.7)	98 (16.7)	276 (46.9)	198 (33.7)	588	3.12	5
Government policy to encourage the expansion of foreign markets for U. S. farm products	28 (4.8)	32 (5.5)	206 (35.2)	320 (54.6)	586	3.40	2
Government programs to preserve the family farm	55 (9.4)	115 (19.6)	190 (32.4)	226 (38.6)	586	3.00	4
Cooperative farm organizations bargaining with business and industry	53 (9.2)	85 (14.7)	286 (49.5)	154 (26.6)	578	2.93	6
Farmer ownership of large processing plants	70 (12.0)	174 (29.9)	252 (43.3)	86 (14.8)	582	2.61	10
Farmer ownership of large supermarket chains	101 (17.3)	245 (42.0)	178 (30.5)	59 (10.1)	583	2.33	11
Government policy to limit the size of farms	337 (57.1)	122 (20.7)	90 (15.3)	41 (6.9)	590	1.72	8††
Establish a more direct link between farmers and consumers by reducing the number of middlemen (food processors, marketers, etc.)	17 (2.9)	36 (6.1)	181 (30.5)	359 (60.5)	593	3.49	1
Reduce farmers' dependency on outside input markets (for example, machinery and fertilizer) by encouraging organic farming and small, inexpensive machinery	151 (25.9)	189 (32.4)	158 (27.1)	86 (14.7)	584	2.31	8††
A land trust system (such as land owned by the local community and leased to a farmer for life) designed to enable more people to live on the land and to farm	331 (57.0)	120 (20.7)	95 (16.4)	35 (6.0)	581	1.71	7

*Percentages may not sum to 100.0 due to rounding error.
†Weighted value given to each response.
‡Several respondents elected not to answer each question, which explains the variability in the number of respondents.
**Respondents were asked to rank all 11 factors in order of importance in a separate question. The weighted rank order was calculated by weighting each response (1 through 11) and multiplying by its corresponding frequency. The sum was divided by the total number of responses (within each factor item category) and the resulting value was used to determine final weighted rank order.
††The rank orders were equal.

TABLE 13.—Factors Influencing Decision-Making About Adoption of New Farm Equipment: Relative Importance and Rank Order (Percentages in Parentheses).*

Decision-Making Factor	Possible Responses									Average Item Score	Weighted Rank Order‡
	Not Important			Somewhat Important			Very Important				
	0†	1†	2†	3†	4†	5†	6†	7†	8†		
Purchase price (N = 449)	5 (1.1)	6 (1.3)	2 (0.4)	21 (4.7)	47 (10.5)	31 (6.9)	105 (23.4)	52 (11.6)	180 (40.1)	6.33	1
Anticipated savings in time (N = 443)	3 (0.7)	8 (1.8)	4 (0.9)	16 (3.6)	39 (8.8)	35 (7.9)	104 (23.5)	76 (17.2)	158 (35.7)	6.37	2
Reduction of drudgery in farm operations (N = 441)	5 (1.1)	11 (2.5)	12 (2.7)	31 (7.0)	45 (10.2)	59 (13.4)	87 (19.7)	56 (12.7)	135 (30.6)	5.89	3
Amount of reorganization of farming operation necessary to use it (N = 440)	22 (5.0)	9 (2.0)	14 (3.2)	36 (8.2)	68 (15.5)	53 (12.0)	80 (18.2)	56 (12.7)	102 (23.2)	5.39	4
Extent to which use of new equipment is risky to entire farm operation (N = 426)	12 (2.8)	11 (2.6)	16 (3.8)	22 (5.2)	57 (13.4)	43 (10.1)	68 (16.0)	60 (14.1)	137 (32.2)	5.80	5
Maintenance costs (N = 446)	2 (0.4)	7 (1.6)	7 (1.6)	23 (5.2)	30 (6.7)	40 (9.0)	104 (23.3)	71 (15.9)	162 (36.3)	6.33	6
Easy repair (N = 428)	6 (1.4)	2 (0.5)	8 (1.9)	23 (5.4)	34 (7.9)	46 (10.7)	89 (20.8)	68 (15.9)	152 (35.5)	6.30	7
Quick return on investment (N = 437)	11 (2.5)	9 (2.1)	23 (5.3)	50 (11.4)	84 (19.2)	50 (11.4)	84 (19.2)	42 (9.6)	84 (19.2)	5.18	8

*Percentages may not sum to 100.0 due to rounding error.

†Weighted values given to each designated response.

‡Respondents were requested to rank all 8 factors from 1 to 8 in order of importance in a separate question. The weighted rank order was calculated by weighting each response (1 through 8) and multiplying by its corresponding frequency. The sum was divided by the total number of responses (within each factor item category) and the resulting value was used to determine final weighted rank order.

the farmers included in the study were strongly in favor of reducing the role of middlemen in the food delivery system. The respondents felt this would be the most helpful mechanism of all strategies evaluated. Another strategy which was perceived to be important was government action to expand foreign markets for farm products. Programs to preserve the family farm, cooperative bargaining, and expansion of agricultural training in farm management skills were perceived to be only somewhat helpful.

Many farmers (85.5%) believed that a reduction of government involvement in agriculture would be somewhat helpful. This orientation is slightly contradictory to the respondents' desire to have government involvement in the expansion of foreign markets and to have government programs developed to maintain the family farm. Apparently the respondents only want government involvement in the industry when it is to their advantage and are opposed to government regulations when the involvement generates some type of cost for them.

The study respondents did not believe that farmer ownership of supermarket chains or reduced dependency upon outside input markets for such things as machinery and fertilizers would be helpful. Government action to limit farm size and the formation of land trusts were viewed to be counter-productive to reducing the problems.

The respondents were asked to rank the strategies presented in Table 12 from most important to least important. The rank order data are presented in the last column of Table 12 and show that the farmers believed the elimination of middlemen is the most effective means for solving the problems in agriculture. Other favored strategies in order of perceived importance are: expansion of international markets, reduced government involvement in agriculture, programs to preserve the family farm, and expanded training in farm management skills. The two least favored approaches were farmer ownership of processing plants and farmer ownership of large supermarket chains.

Factors Affecting Adoption of New Technologies

Another important component of the study is the series of questions about factors affecting adoption or rejection of new farm technologies. An extensive literature review was conducted and many faculty members in the OSU College of Agriculture and Home Economics were interviewed to determine the key factors employed in decision-making about adoption of new farm technology. The study respondents were asked to check the number on a series of continuums which *best* reflected the degree of importance attached to each factor when making decisions about whether or not to adopt a new farm technology. The responses ranged from "no importance" which was weighted 0 to "very important" which was weighted 8. Respondents were also requested in a subsequent question to rank the factors in order of priority from 1 to 8. The item responses are presented in Table 13.

The data presented in Table 13 show that farmers perceived all of the factors to be important in determining whether or not they will adopt a new farm technology. The factors perceived to be very important are price, maintenance costs, anticipated time savings, and easy repair.

The rank ordering is very informative since it provides insight into the priorities placed on the decision-making factors. Two factors defined as very important in the decision-making process were ranked relatively low in terms of priority given to each factor. These factors are ease of repair and maintenance costs. Reduction in drudgery and amount of reorganization of farming operation were ranked very high in terms of priority but only defined as somewhat important in the decision-making process. Purchase price and anticipated savings were defined as very important and ranked highest in terms of priority in decision-making. The risk factor was rated fifth.

These findings suggest that initial expenditures and expected return to investment are the major factors in decision-making about adoption of new farm technologies. Quick return on investment was ranked very low relative to other factors, which suggests that farmers are more concerned about the long-run return on investment in technology rather than short-run returns. The relative low concern for risk to the farm operation should not be too surprising because farm machinery has been well tested prior to its introduction, which reduces risk. The buyer basically knows what results to expect when the technology is adopted.

The maintenance costs and ease of repair were evaluated as being very important, but ranked relatively low in terms of decision-making. This suggests that if the new technology satisfies the conditions set forth in the higher ranked factors, it will be adopted even if the new equipment is more expensive to maintain and more difficult to repair than the equipment presently being used.

In essence, the findings indicate that farmers are looking for farm technology that is reasonably priced, will produce a savings in time, reduces the amount of labor required in the farm operation, and necessitates little reorganization of the farm operation. This appears to be true even if the new technology will increase maintenance costs, will be more difficult to repair than existing technology, and will probably not produce a quick return on investment.

TABLE 14.—Factors Influencing Decisions to Adopt New Agricultural Techniques: Relative Importance and Weighted Rank Order (Percentages in Parentheses).*

Decision-Making Factor	Possible Responses									Mean for Item Response	Weighted Rank Order‡
	Not Important			Somewhat Important			Very Important				
	0†	1†	2†	3†	4†	5†	6†	7†	8†		
Initial cost (N = 419)	2 (0.5)	6 (1.4)	2 (0.5)	16 (3.8)	41 (9.8)	45 (10.7)	100 (23.9)	58 (13.8)	149 (35.6)	6.31	1
Anticipated savings in time (N = 418)	2 (0.5)	4 (1.0)	6 (1.4)	14 (3.3)	28 (6.7)	44 (10.5)	106 (25.4)	76 (18.2)	138 (33.0)	6.38	2 2
Maintenance costs (N = 413)	1 (0.2)	4 (1.0)	2 (0.5)	23 (5.6)	34 (8.2)	66 (16.0)	99 (24.0)	66 (16.0)	118 (28.6)	6.17	3
Understanding how new technique can benefit farm operation (N = 416)	1 (0.2)	7 (1.7)	3 (0.7)	10 (2.4)	34 (8.1)	35 (8.3)	111 (26.4)	69 (16.4)	150 (35.7)	6.42	4
Reduction of drudgery in farm operations (N = 416)	3 (0.7)	9 (2.1)	15 (3.6)	33 (7.9)	57 (13.6)	70 (16.7)	81 (19.3)	50 (11.9)	102 (24.3)	5.63	5
Amount of reorganization of farming operations necessary (N = 422)	12 (2.9)	6 (1.4)	13 (3.1)	26 (6.3)	73 (17.6)	67 (16.2)	106 (25.6)	42 (10.1)	69 (16.7)	5.37	6**
Quick return on investment (N = 420)	7 (1.7)	6 (1.4)	11 (2.6)	28 (6.7)	73 (17.5)	59 (14.2)	110 (26.4)	45 (10.8)	77 (18.5)	5.50	6**
Extent to which use of new technique is risky to entire farm operation (N = 422)	4 (1.0)	8 (1.9)	10 (2.4)	30 (7.2)	48 (11.6)	43 (10.4)	99 (23.9)	62 (15.0)	110 (26.6)	5.89	8

*Percentages may not sum to 100.0 due to rounding error.
†Weighted value given to each designated response.
‡The method used to calculate the rank order was the same as noted in Table 13.
**The rank orders were equal.

Factors Affecting Adoption of Farm Techniques

A second component of farm adoption which was evaluated in the study was farming techniques. The agricultural service sector is continually experimenting with new techniques to improve farming operations which are diffused to agriculturalists for evaluation. These techniques are generated under experimental conditions and diffused to farming groups via the Extension Service, mass media, and personal visitation to experimental plots. Some farmers adopt and others do not. The research question raised in the questionnaire was, What factors do farmers use in making decisions about adoption of new farming techniques?

Several of the factors identified as being relevant to farm technology were also deemed appropriate for evaluating farming techniques except ease of repair. The latter issue was replaced with understanding how the technique would benefit the farm operation. The same methodology used to assess farm technologies was employed to evaluate new farm techniques. The responses are presented in Table 14.

The findings demonstrated that all of the factors selected for study were defined as being important by the respondents. The factors rated highest in terms of importance are: understanding how the new technique will benefit the farm operation, anticipated time savings, initial adoption costs, maintenance costs, and risk associated with adoption. Quick return on investment, amount of farm reorganization, and reduction in labor were perceived to be somewhat important, but less than those already mentioned.

Respondents were also requested to rank the factors from 1 to 8 in the same manner discussed in the previous section about new technology. The rankings for new farming techniques are quite similar to those for new technology. Initial cost was ranked first and anticipated savings in time ranked second. Surprisingly, maintenance cost of new techniques is perceived to be very significant for farm techniques but not so important for new technology. Amount of reorganization of farm operation and quick return on investment were ranked relatively low.

The factor ranked lowest was amount of risk associated with adoption of the new technique. Apparently most farmers realized that many farm techniques do not require complete adoption but may be applied on a trial basis. Also, most new farm techniques are tested prior to diffusion and the outcomes of adoption tend to be known which significantly reduces the risk associated with adoption.

Extent of Farm Practices Used and Time of Adoption

Closely aligned with adoption of new technologies and new farm techniques is the extent to which they have been adopted and when they were first used. Several farm practices were chosen to represent different types of farm practices and technologies. Care was also taken to select examples of farm techniques and technologies which were introduced at different time periods. Respondents were requested to indicate whether or not the techniques or technologies were used and when they were first employed in the farming operation. These data are presented in Table 15.

These data indicate that herbicides, custom-blended fertilizers, and crop rotation are the most frequently used farm practices evaluated. Deep plowing, high number of plants per acre, and early timing of farming were less frequently used practices, but were employed by a majority of the respondents who answered this question. Plastic drain tiles were used by a sizable minority of the respondents. Wet harvest combined with mechanical drying, use of Extension production testing, use of organic fertilizers, adoption of high yield forage crops, no till or minimum till, and pro-las liquid cattle feed were cited by a minority of the respondents.

These findings suggest that most farmers have adopted more than one recommended farm practice. The time of adoption data presented in Table 15 demonstrate that most farmers adopted their farm practices after 1960. The only farm practices which were widely adopted prior to 1960 were use of organic fertilizer, crop rotation, and Extension production testing. The most recently adopted farm practices were no till/minimum till, high number of plants per acre, pro-las liquid cattle feed, plastic drain tile, and wet harvest with mechanical drying.

Type of Farm Equipment in Use

To explore farm technology in greater depth, the respondents were asked to provide data about farm equipment used in their farm operations. These data are presented in Table 16.

The data in Table 16 show that a majority of the farmers had not adopted farm drying equipment or metal grain storage, but those who had adopted them had done so primarily in the 1970's. The availability of government grain storage prior to the 1970's may explain the late adoption of metal grain storage. Adoption of spraying equipment was quite extensive (59.1%) and considerable adoption occurred in the 1970's.

More than three-fourths of the respondents used tractors in their farming operations, with an average horsepower of 87.5 for the largest tractor used. The average horsepower of the largest tractor used in 1979 was 32.3 horsepower greater than the largest tractor used in 1969.

TABLE 15.—Selected Agricultural Techniques Used by Respondents: Distribution of Use and Time of First Use.

Agricultural Practice Category	Number of Users	Percent	Time of First Use					
			Prior to 1950	1950-59	1960-69	1970-75	1976-79	No Date Given
No till/minimum till (N = 459)	98	21.4	2 (2.0)	3 (3.1)	15 (15.3)	33 (33.6)	37 (37.8)	8 (8.2)
High number of plants per acre (N = 439)	251	57.2	4 (1.6)	18 (7.2)	45 (17.9)	62 (24.7)	53 (21.1)	69 (27.5)
Organic fertilizer (N = 449)	126	28.1	16 (12.7)	19 (15.1)	14 (11.1)	8 (6.3)	22 (17.5)	47 (37.3)
Herbicides (N = 458)	400	87.3	11 (2.8)	53 (13.3)	123 (30.8)	74 (18.5)	35 (8.8)	104 (26.0)
High yield forage crops (N = 427)	131	30.7	6 (4.6)	13 (9.9)	30 (22.9)	23 (17.6)	22 (16.8)	37 (28.2)
Custom-blended fertilizers (N = 464)	362	78.0	21 (5.8)	31 (8.6)	87 (24.0)	74 (20.4)	37 (10.2)	112 (30.9)
Pro-las liquid cattle feed (N = 429)	33	7.7	1 (3.0)	0 (0.0)	6 (18.2)	15 (45.5)	6 (18.2)	5 (15.2)
Deep plowing (N = 457)	247	54.0	24 (9.7)	34 (13.8)	49 (19.8)	36 (14.6)	19 (7.7)	85 (34.4)
Plastic drain tile (N = 454)	195	43.0	0 (0.0)	1 (0.5)	30 (15.4)	73 (37.4)	45 (23.1)	46 (23.6)
Early timing of farming operations (N = 424)	231	54.5	9 (3.9)	14 (6.1)	43 (18.6)	52 (22.5)	19 (8.2)	94 (40.7)
Wet harvest with mechanical drying (N = 449)	111	24.7	1 (0.9)	6 (5.4)	29 (26.1)	36 (32.4)	16 (14.4)	23 (20.7)
Crop rotation (N = 461)	399	86.6	85 (21.3)	56 (14.0)	49 (12.3)	34 (8.5)	20 (5.0)	155 (38.8)
Extension production testing program (N = 435)	66	15.2	5 (7.6)	16 (24.2)	12 (18.2)	8 (12.1)	11 (16.7)	14 (21.2)

Slightly more than half of the respondents indicated that they used a combine harvester in their farm operation and that 45.3% of the combines in use were self-propelled. The average header width of the largest combine in use was slightly larger than 12 feet and the average bin capacity was almost 82 bushels. Comparable data for combine header width and bin capacity for equipment used 10 years ago revealed the average header width to be 8.9 feet and bin capacity to be 45.5 bushels. These data clearly show the rapidly increasing size and complexity of farm machinery being used in the state.

TABLE 16.—Characteristics of Farm Equipment Used by Study Respondents (N = 623).

Farm Equipment	Descriptive Data
Percent of Farmers Using Farm Drying Equipment	19.3
Percent Adopting Drying Equipment in the 1970's	50.0
Percent of Farmers Using Spraying Equipment	59.1
Percent Adopting Spraying Equipment in the 1970's	39.0
Percent of Farmers Using Metal Grain Storage	23.1
Percent of Farmers Adopting Metal Grain Storage in the 1970's	58.3
Percent of Farmers Using a Tractor on Farm	77.4
Average Number of Tractors Owned	2.9
Average Horsepower of Largest Tractor in Use on Farm	87.5
Average Horsepower of Largest Tractor in Use 10 Years Ago	55.2
Percent of Respondents Using a Combine Harvester	52.6
Average Number of Combines Owned	1.0
Percent of Respondents Using Self-Propelled Combines	45.3
Average Header Width of Largest Combine in Use in Feet	12.2
Average Bin Capacity of Largest Combine in Use on Farm in Bushels	81.9
Percent of Respondents Using a Combine 10 Years Ago	47.5
Average Header Width of Largest Combine Used 10 Years Ago in Feet	8.9
Average Bin Capacity of Largest Combine Used 10 Years Ago in Bushels	45.5

Perceived Sources of Support from Nonfarm Groups

The study respondents were asked to assess the level of mutual interests which exist between farmers and selected nonfarm groups. The possible responses were: much, some, and none. These responses were weighted 1 through 3, with 1 indicating much commonality, 2 indicating some commonality, and 3 indicating none. The findings are presented in Table 17.

These data indicate that the farmers responding to the question believed that consumers had the highest degree of commonality with farming interests. Small businessmen and agri-business firms were also perceived to have much in common with farmers. The respondents believed that poor people living in cities, environmentalists, and organized labor had the least commonality of interests.

The nonfarm groups noted in Table 17 were ranked in terms of relative importance as political allies to farmers. The respondents were asked to select the *most helpful* ally and then to select the *least helpful* ally. The findings are presented in Table 18.

The findings indicate that farmers perceived consumers to be the most helpful nonfarm group, fol-

TABLE 17.—Perceptions of Survey Respondents Toward Degree of Commonality of Interests with Selected Non-Farm Groups (Percentages in Parentheses).*

Question Item	Much 1†	Some 2†	None 3†	Mean for Item Response	Number of Respondents‡
Consumers	269 (50.1)	212 (39.5)	56 (10.4)	1.60	537
Small businessmen	224 (41.3)	298 (55.0)	20 (3.7)	1.62	542
Agri-business firms (such as machinery manufacturers)	224 (42.2)	263 (49.6)	44 (8.3)	1.67	531
Unorganized labor	99 (19.9)	287 (57.6)	112 (22.5)	2.02	498
Big businessmen	78 (14.7)	281 (53.0)	171 (32.3)	2.18	530
Poor people living in large cities	60 (11.4)	236 (44.7)	232 (43.9)	2.32	528
Environmentalists	36 (6.9)	276 (52.8)	211 (40.3)	2.33	523
Organized labor	38 (7.3)	187 (36.0)	295 (56.7)	2.50	520

*Percentages may not sum to 100.0 due to rounding error.
†Weighted values given to each designated response.
‡Some respondents elected not to answer some of the questions, which explains the variability in the sample size.

TABLE 18.—Farmers' Ranking of Potential Allies (Percentages in Parentheses).*

Potential Ally	Most Helpful (N = 600)	Least Helpful (N = 562)
Consumers	274 (45.7)	22 (3.9)
Agri-business firms (such as machinery manufacturers)	82 (13.7)	11 (2.0)
Small businessmen	73 (12.2)	9 (1.6)
Organized labor	33 (5.5)	170 (30.2)
Unorganized labor	33 (5.5)	20 (3.6)
Big businessmen	12 (2.0)	102 (18.1)
Poor city people	7 (1.2)	84 (14.9)
Environmentalists	4 (0.7)	101 (18.0)
No alliances should be sought by farmers	82 (13.7)	43 (7.7)

*Percentages may not sum to 100.0 due to rounding error.

lowed by agri-business firms, small businessmen, organized and unorganized labor groups. Big businessmen, poor people in cities, and environmentalists were seen as least helpful. It is interesting to note that many farmers viewed organized labor as the least helpful ally, followed very closely by big businessmen and environmentalists.

Comparison of the data presented in Tables 17 and 18 show that the nonfarm groups perceived by farmers to have the most common interest were also those perceived to be the most helpful politically. In fact, the consumers were perceived to have the most in common with farmers (Table 17), and were selected as potentially the most helpful ally (Table 18). This indicates that farmers view themselves as closely aligned to consumer and small business groups and potentially at odds with organized labor and big business interests.

The respondents were asked to indicate how important political allies are to farmers. The responses to the question are as follows: very important—19.5%; somewhat important—53.0%; and not important—23.1% (4.4% of the respondents did not answer the question). These data indicate the respondents feel that political alliances are necessary and that the old Jeffersonian ideal of the independent farmer is probably no longer appropriate.

These data suggest that farmers are aware of the necessity for forming political alliances and that farmers may begin building alliances with nonfarm groups. It is highly likely that the alliances will be sought with consumer and small business groups as opposed to large corporate interests and organized labor. Nonfarm groups which hold little power, such as the urban poor and environmentalists, will probably not be considered as allies since they are perceived to have little in common with agriculturalists and have little political influence.

Attitudes Toward the American Agricultural Movement

Respondents were asked about their feelings toward the American Agriculture Movement (AAM)

TABLE 19.—Attitudes of Respondents Toward the American Agriculture Movement (N = 555).

	Frequency	Percent
I support their efforts, but must sell my farm products to survive economically.	51	9.2
I support their goals, but I do not agree with their tactics.	138	24.9
I support their goals and tactics, but I am not actively involved with the AAM.	46	8.3
I do not support the AAM.	112	20.1
I do not know enough about the AAM to support it or not support it.	208	37.5

TABLE 20.—Distribution of 1978 Net Farm Income (N = 545).

Income Category	Frequency	Percent	Income Category	Frequency	Percent
Costs Exceed Income	74	13.6	$17,500 - 19,999	25	4.6
			$20,000 - 22,499	21	3.9
Break even	60	11.0	$22,500 - 24,999	15	2.8
$0 - 2,499	77	14.1	$25,000 - 27,499	9	1.7
$2,500 - 4,999	55	10.1	$27,500 - 29,999	1	0.0
$5,000 - 7,499	35	6.4	$30,000 - 32,499	9	1.7
$7,500 - 9,999	47	8.6	$32,500 - 34,999	4	0.7
$10,000 - 12,499	34	6.2	$35,000 or more	30	5.5
$12,500 - 14,999	27	5.0	Total	545	99.9*
$15,000 - 17,499	22	4.0			

*Percentages do not sum to 100.0 due to rounding error.

in terms of the extent of support for the movement. The findings are presented in Table 19.

These data indicate that many respondents did not know enough about the AAM to have an opinion (37.5%). A majority of the respondents who had an opinion about the AAM were supportive of the basic goals and objectives but were either opposed to the tactics used by the AAM or were not able to withhold farm products due to economic conditions. Only 20.1% of the respondents indicated that they did not support the AAM.

These findings are very interesting because political activism is a common strategy of the AAM and many farmers have not been politically active in the past. Perhaps the orientation of Ohio farmers has shifted and will produce more political activism in the future to garner support from nonfarm groups for vested interests.

Farm Income Data

The respondents were requested to provide data about their farm and nonfarm incomes. These data are presented in Tables 20, 21, and 22.

The data presented in Table 20 indicate that almost 50% of the respondents earned less than $5,000 from their farms in 1978. These data must be interpreted carefully, however, since some farm land in the state is leased to others and some farms were undoubtedly used as tax shelters and for investment purposes by people who do not farm.

The data presented in Table 21 indicate that the respondents, as a group, increased their net farm income from 1977 to 1978. The majority earned about the same while more respondents improved their net farm income than those who decreased.

TABLE 21.—Comparison of 1978 Net Farm Income with 1977 Net Farm Income (N = 548).

Possible Response	Frequency	Percent
Much larger	33	6.0
Slightly larger	157	28.6
About the same	239	43.6
Slightly smaller	82	15.0
Much smaller	37	6.8

TABLE 22.—Distribution of Nonfarm Income for Husband, Wife, and Other Household Members (Data Include Only Family Units with Family Members with Nonfarm Income).

	Husband		Wife		Other Family Member	
Income Category	Frequency	Percent	Frequency	Percent	Frequency	Percent
Less than $6,999	36	17.9	52	47.7	11	37.9
$7,000 - 12,999	48	23.9	37	33.9	12	41.4
$13,000 - 18,999	52	25.9	19	17.4	2	6.9
$19,000 - 24,999	38	18.9	1	0.9	3	10.3
Above $25,000	27	13.4	0	0.0	1	3.4
Totals	201	100.0	109	99.9*	29	99.9*
Average Nonfarm Income	$15,347		$7,915		$9,150	

*Percentages do not sum to 100.0 due to rounding error.

Data presented in Table 22 show that a considerable number of farmers worked jobs which were not agriculturally oriented. A total of 335 respondents (53.8% of the sample) indicated that at least *one family member* was engaged in some type of nonfarm employment. This should not be surprising because more rural women have joined the nonfarm labor force in recent years and rural areas have diversified economic bases. The mean income earned by males (husbands) from nonfarm sources is quite high ($15,347) and the mean number of days worked by the husband in nonfarm work was 239.7 days per year. Comparable data for wives was 203.1 days per year, while the mean days worked for other family members was 203.5 days per year. These data suggest that the nonfarm jobs are, for the most part, full-time and that agriculture is a part-time economic activity.

Since the mean income is so high from nonfarm sources and the number of days worked in nonfarm jobs is so great, it is quite possible that persons engaged in part-time farming are merely supplementing income from nonfarm sources rather than using the nonfarm job to supplement farming income. It is commonly thought that rural residents who engage in part-time farming are farmers first and nonfarm workers second, but the magnitude of the income derived from nonfarm sources and number of days worked in nonfarm occupations suggest that the respondents in this study are full-time nonfarm workers and are using agriculture as a secondary work activity.

Sources of Farm Income for Last 3 Years by Farm Product

Data were collected about the source of farm income relative to the type of farm products marketed. Respondents were asked to indicate the proportion of their farm income which was derived from each farm product for the past 3 years. The data are presented in Table 23.

These data show that soybeans and corn accounted for a considerable portion of the net farm income during the past 3 years. Clearly these two crops are extremely important to the farmers included in this study. Research information about these two crops should be widely sought, since the economic viability of the study respondents is significantly dependent upon these crops.

Capacity to Finance Farm Activities

Another economic factor investigated was access to credit and the ability of farmers to secure financing for major farm equipment. The respondents were given names of important pieces of farming equipment and asked if they had wished to purchase the item during the last 5 years. They were then asked if they needed financing, whether or not they sought financing, and if they received financing. These data are presented in Table 24.

These data show that a large number of respondents indicated they wished to purchase farm equipment and most actually secured financing to purchase the equipment. Almost 61% of those who wished to purchase a tractor needed financing, and 84.1% sought funding. Of those who needed financing, 90.5% were able to secure financial support. The number of people who obtained financing was higher than those seeking financing, which is logical since unconventional sources, such as family and friends, would explain this situation. With the exception of the "other" category, all of the farm equipment investigated exhibited the same pattern.

Of those wishing to purchase a combine harvester, 62.7% needed financing and 87.4% sought financing. About 92.8% of the farmers who needed financing secured it. About 61.1% of the farmers who wished to purchase drying equipment needed financing, and 81.8% sought funding. About 84.1% of those persons needing financing secured it. The pattern of responses for metal grain storage is similar

TABLE 23.—Reported Percentages of Net Farm Income Over Last 3 Years Derived from Each Farm Product.

Farm Product	Farmers Reporting Some Income From Product	Percent of Total Respondents	Average Percentage of Net Farm Income*
Soybeans	343	55.1	25.8
Corn	376	60.4	23.5
Other†	207	33.2	16.9
Dairy Products	95	15.2	12.7
Wheat	275	44.1	8.7
Swine	90	14.4	5.8
Sheep	43	6.9	1.9
Vegetables	22	3.5	1.6
Fruit	12	1.9	1.2

*Percentages do not sum to 100.0 due to rounding error.
†Primarily beef cattle, hay, and oats.

TABLE 24.—Access to Purchases of Farm Equipment (Percentages in Parentheses—N = 623).

Equipment Item	Those Who Wished To Purchase	Those Who Needed Financing	Those Who Sought Financing	Those Who Obtained Financing
Tractor	330 (53.0)	201 (60.9)	169 (84.1)	182 (90.5)
Combine harvester	177 (28.4)	111 (62.7)	97 (87.4)	103 (92.8)
Drying equipment	72 (11.6)	44 (61.1)	36 (81.8)	37 (84.1)
Metal grain storage facility	112 (18.0)	64 (57.1)	53 (82.8)	55 (85.9)
Other*	79 (12.7)	57 (72.2)	50 (63.3)	49 (86.0)

*The majority of other types of equipment were hay balers and livestock handling equipment.

to the other pieces of equipment, with 57.1% needing financing, 82.8% seeking financing, and 85.9% securing financing. Corresponding data for other types of farm equipment are 72.2% needing financing, 63.3% seeking financing, and 86.0% securing financing.

The findings presented in Table 24 strongly suggest that access to farm equipment financing is not a serious problem because most farmers who needed financing were able to secure funding. The proportion of farmers who actually purchased farm equipment was probably much higher than the number seeking (and securing) financing would suggest. It is highly probable that many of the farmers who wished to purchase farm equipment did so from gross farm income and did not need outside funding.

SUMMARY OF FINDINGS

The major study findings are presented in summary form:

- The farmers included in this study have extensive agricultural training in the form of farm work experiences, as well as formal agricultural training.
- A large number of the farmers' spouses have little or no previous farm experiences and little agricultural training.
- A large majority of the farmers' parents were engaged in farming.
- The respondents appear to want the benefits of land use controls without internalizing the costs of such controls.
- The farm sample is highly committed to farming as a way of life.
- The respondents tend to be very positive toward agricultural production and slightly negative toward environmental issues.
- Farmers tend to be more interested in sure profits rather than assuming risks for possible higher profits.
- Farmers tend to view farming as a business, and approach their farming activities from a business perspective.
- There is general agreement that farming as an industry is facing many problems which cannot be solved by government intervention.
- A majority of the farmers appear to be alienated from government programs and tend to exhibit feelings of powerlessness.
- The respondents tend to favor programs to increase direct marketing of farm products, but not farmer ownership of processing systems.
- Structural factors, such as farm policies and the organization of the agricultural system, are perceived to be the major contributing factors to farmers' problems.
- Farmers tend to favor government involvement in the industry when it is to their advantage, but oppose government action when such activity is not in their best interests.
- Price, maintenance costs, anticipated saving in time and money, and ease of repair are the factors considered to be most important in adoption decisions about new farm technologies.
- Farmers are much less concerned about immediate return to investments from farm technology than they are to long-term return.
- Herbicides, custom-blended fertilizers, and crop rotation are the most frequently used farm practices.
- Most farm practices which were evaluated in this study were first used after 1960.

- Farm equipment has increased in size and complexity during the last 10 years.
- Farmers believe that consumers and small business people have more in common with them than environmentalists, poor people living in cities, big business interests, and organized labor.
- Farmers believe that consumers and small business people are potentially their best allies.
- Political alliances are viewed as necessary by a majority of the respondents.
- Most people classified as part-time farmers in this study are actually full-time nonfarm workers who work their farms on a part-time basis.
- Structural barriers to farm equipment purchases were not a problem for the respondents, since a great majority indicated they were able to secure financing when needed.
- Net farm income for 1978 appeared to be slightly higher than the preceding year.

The study findings suggest that production agriculture within Ohio is quite viable, and that farmers are adopting new farm technologies and farming techniques as they are being produced. The size and complexity of farming operations have expanded during the last decade, which implies that as the scale of agriculture increases there will probably be continued concentration of land holdings.

The data indicate that farmers within Ohio do not view their industry as contributing to environmental degradation, which suggests that programs designed to reduce nonpoint water pollution will not be widely embraced. The farmers do believe, however, that pesticides which are harmful to wildlife should be banned and that farming should not be exempt from environmental laws.

The attitudes of Ohio farmers toward land use controls suggest that legislation to control land uses in rural areas of the state will be resisted. This is true even though the farmers exhibited knowledge that certain land use controls would probably benefit farming interests.

Finally, the study findings clearly show that farmers within the state are not an homogenous group relative to many issues and socio-demographic characteristics. General statements about what Ohio farmers believe, and characteristics of their farming operations, must be qualified by noting that as an occupational group, farmers vary considerably. The sociology of agriculture within Ohio appears to be a viable research area which should be explored in depth.

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